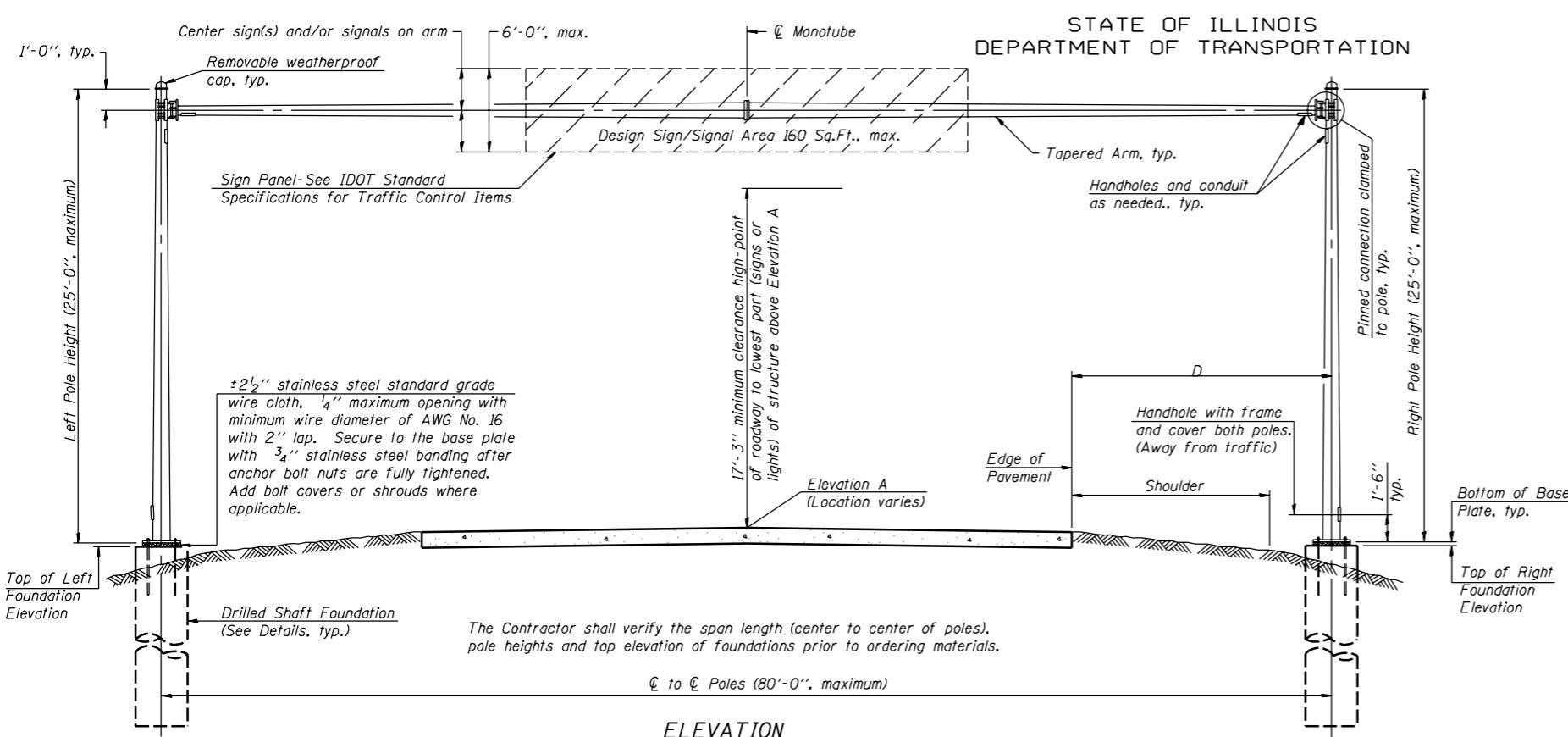


CELL / MODEL NAME	DESCRIPTION	DATE
MONOTUBE-1	Single monotube sign structure - elevation and notes	7/1/2006
MONOTUBE-2	Single monotube sign structure - details and foundation	7/1/2006
DUALTUBE-1	Double monotube sign structure - elevation and notes	7/1/2006
DUALTUBE-2	Double monotube sign structure - details and foundation	7/1/2006



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	HEET NO.
-	-	-		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. -
- SHEETS

GENERAL NOTES

DESIGN: Current (at time of letting) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions. ("Standard Specifications") All references to "Mast Arm Assembly and Pole" are applicable, unless otherwise noted.

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 Structural Welding Code and the Standard Specifications.

ANCHOR RODS: Shall meet Charpy V-notch (CVN) energy of 15 lb·ft at 40° F. No welding shall be permitted on rods.

FASTENERS: All connection bolts shall be High Strength Bolts M164, Galvanize M232 (A153), Type 3, or stainless steel heavy hex conforming to ASTM A193, Grade B8 or B8M, Class 1. U-bolts shall be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished, or an equivalent material acceptable to the Engineer. Nuts for stainless steel bolts shall be stainless steel conforming to ASTM A194, Grade 8 (AISI Type 304) or Grade 8F (AISI Type 303). All nuts shall be "locknuts" with nylon or steel inserts and semifinished hexagonal heads equivalent to the finished heavy hex series of the American National Standard. Washers for stainless steel bolts shall be stainless steel conforming to ASTM A240, Type 302 or 304.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

CAMBER: Minimum AASHTO camber = $\frac{L}{1000}$ + dead load camber.

SIGN STRUCTURE DATA TABLE

BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE MONOTUBE SINGLE	Foot	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	

MONOTYPE SIGN STRUCTURE

DESIGNED	-
CHECKED	-
DRAWN	-
CHECKED	-

200

EXAMINED _____
PASSED _____

ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES

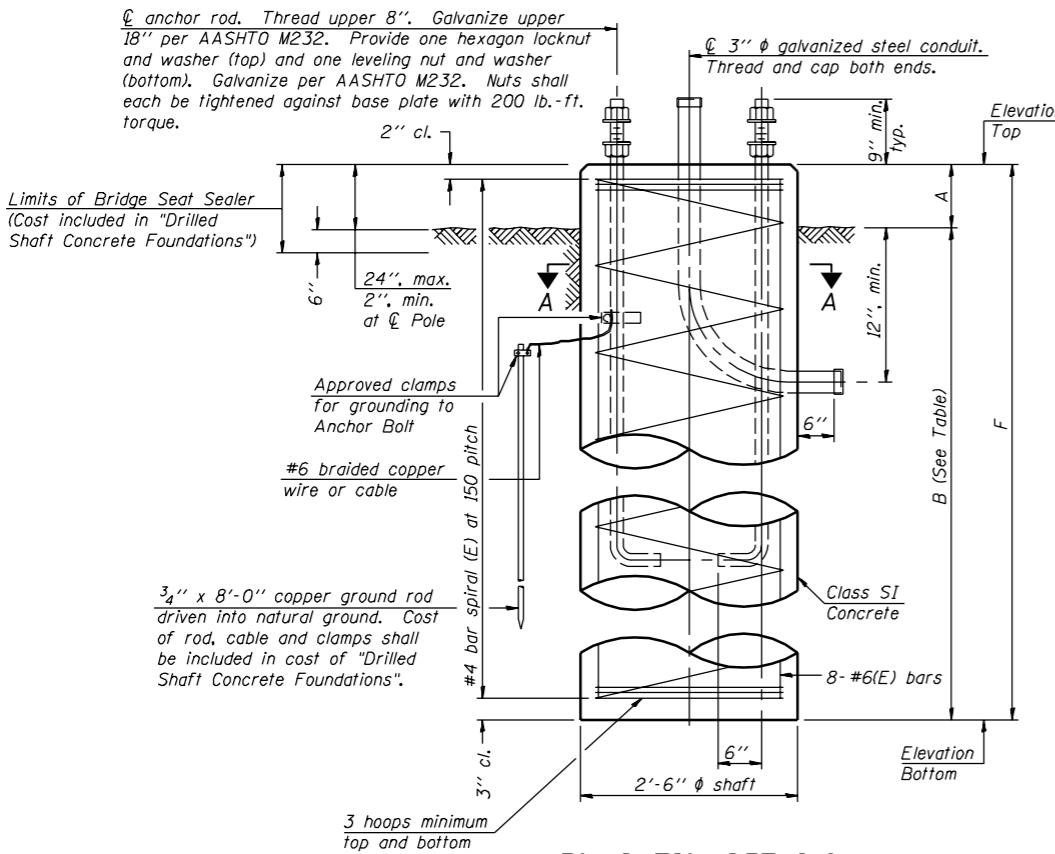
MONOTUBE - 1 7/01/2006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

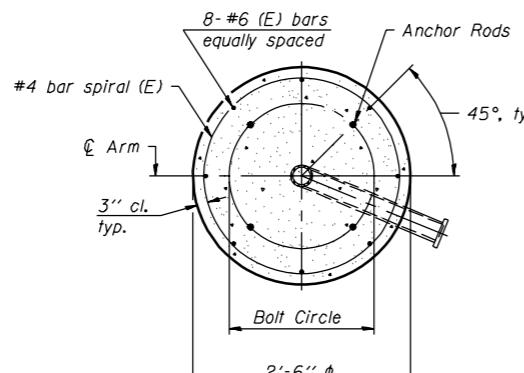
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Contract #

SHEET NO. -
- SHEETS



FOUNDATION DETAILS
Typical, except conduit may only be required at one foundation.
Provide conduit openings both poles.



SECTION A-A

Foundation Design Table	
Span (Ft.)	B (Ft.)
Span ≤ 45	9
45 < Span ≤ 65	10
65 < Span ≤ 80	11

FOUNDATIONS:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Q_u) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

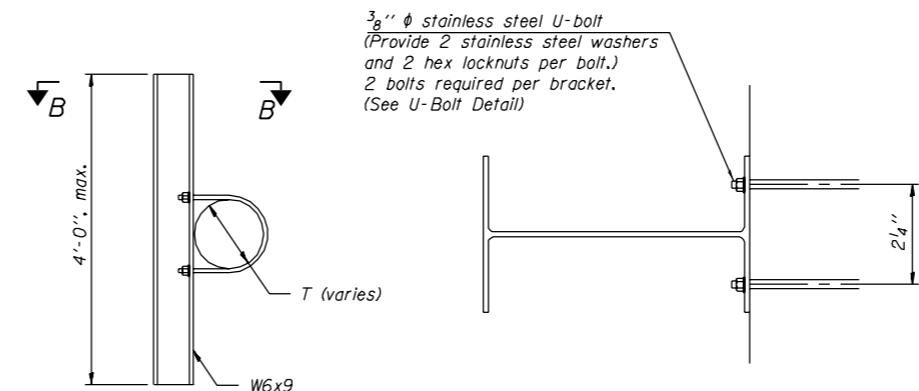
If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

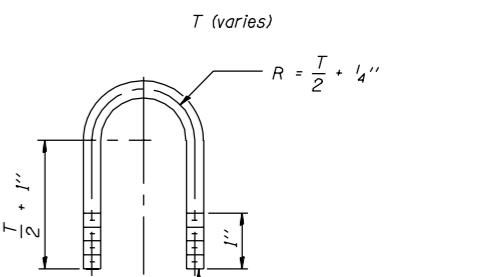
Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Drilled Shaft Concrete Foundation.



SIGN MOUNTING BRACKET
(Minimum 2 Brackets Each Sign)



U-BOLT DETAIL
(Typical)

SECTION B-B
6'-0" maximum spacing,
2'-0" maximum sign
overhang beyond end
bracket.

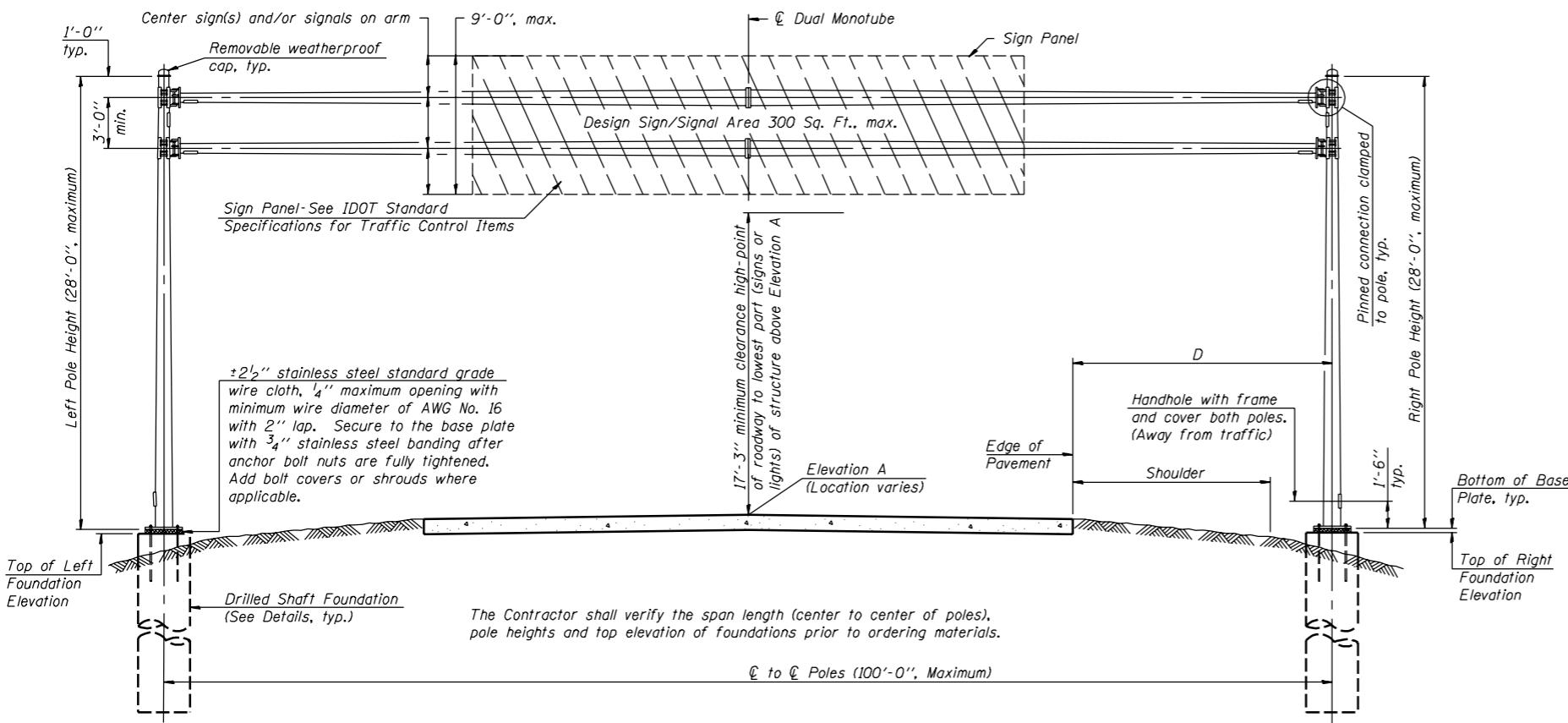
**MONOTUBE SIGN STRUCTURE
FOUNDATION AND SIGN BRACKETS**

DESIGNED -	200
CHECKED -	
DRAWN -	ENGINEER OF BRIDGE DESIGN
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. -
- SHEETS



GENERAL NOTES

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REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

CAMBER: Minimum AASHTO camber = $L / 1000 + \text{dead load camber}$.

ELEVATION

Looking at face of signs.

Looking upstation for structures with signs both sides.

SIGN STRUCTURE DATA TABLE

Structure Number	Station	E to E Poles	Elevation A	Dimension D	Actual Sign/Signal Area	Left Foundation			Right Foundation			Class SI Concrete (Cu. Yds.)	
						Elevation Top	Elev. Bottom	A	B	F	Elevation Top	Elev. Bottom	

DESIGNED -	-
CHECKED -	-
DRAWN -	-
CHECKED -	-

200
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

DUALTUBE - 1 7/01/2006

NUMBER	REVISION	DATE

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE MONOTUBE DUAL	Foot	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	

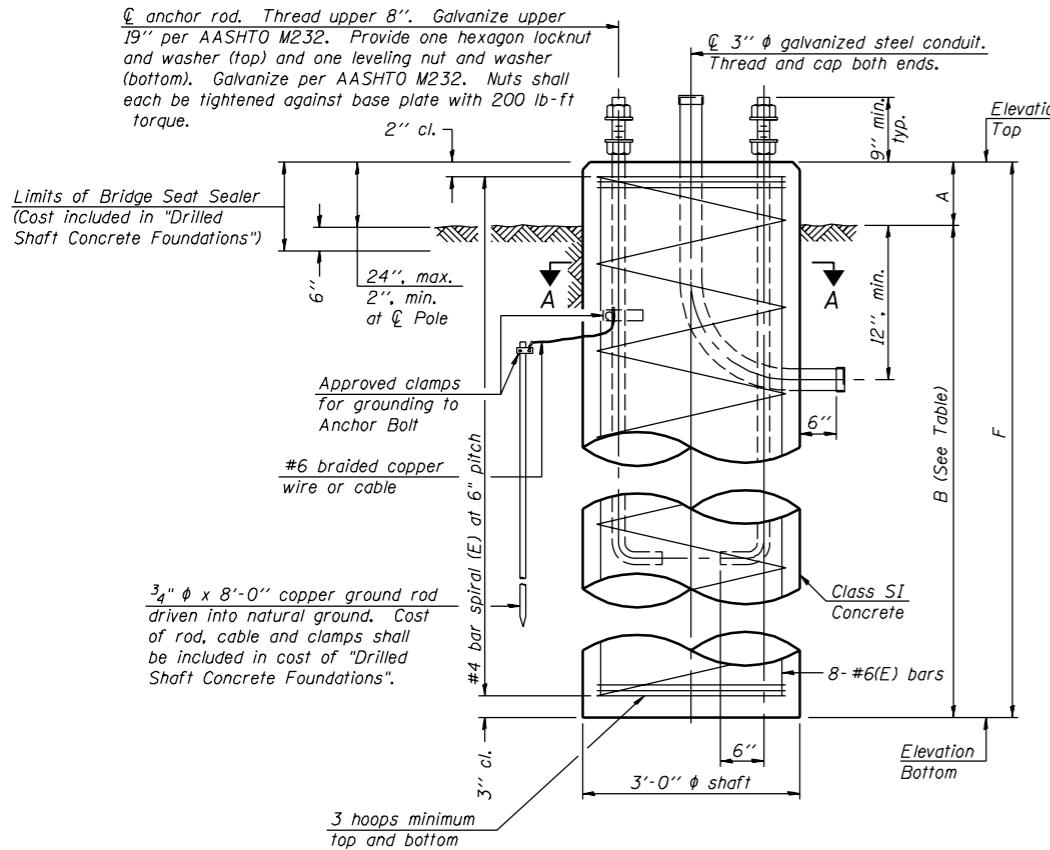
BILL OF MATERIAL

DUAL MONOTUBE SIGN STRUCTURE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
Contract #				

SHEET NO. -
- SHEETS



Foundation Design Table	
Span (Ft.)	B (Ft.)
Span ≤ 65	12
65 < Span ≤ 85	13
85 < Span ≤ 100	14

FOUNDATIONS:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Q_u) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

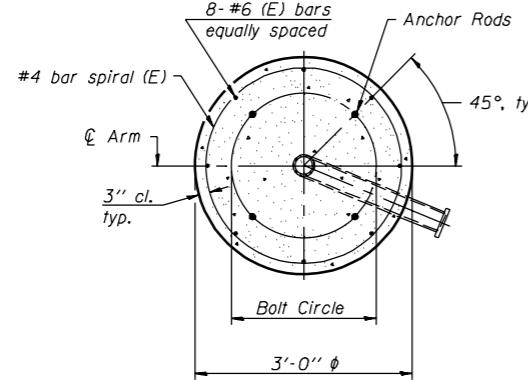
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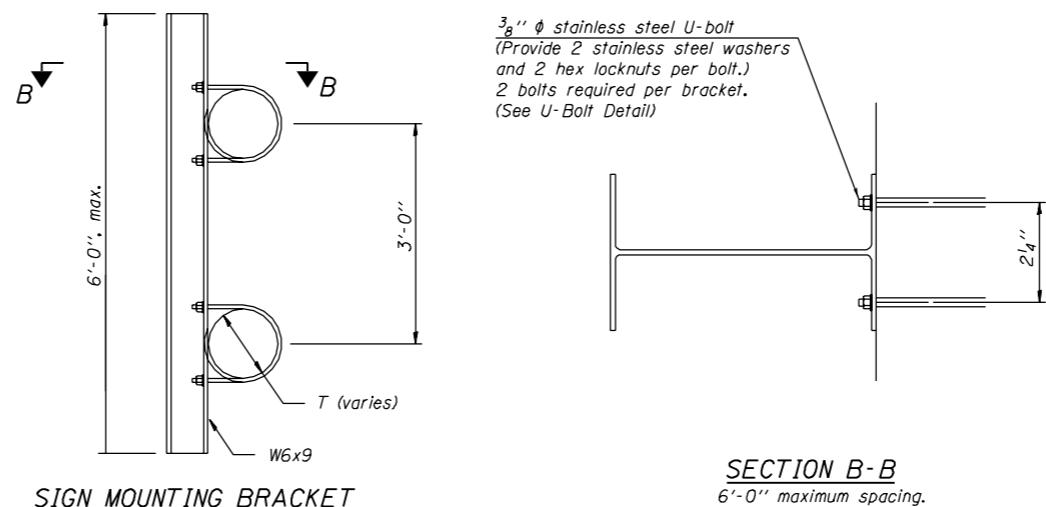
Concrete shall be placed monolithically, without construction joints. Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

FOUNDATION DETAILS
Typical, except conduit may only be required at one foundation.
Provide conduit openings both poles.



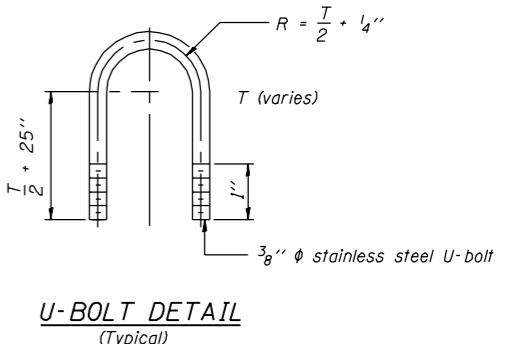
SECTION A-A



SIGN MOUNTING BRACKET

SECTION B-B

6'-0" maximum spacing.
2'-0" maximum sign overhang beyond end bracket.



U-BOLT DETAIL
(Typical)

DUAL MONOTUBE SIGN STRUCTURE

DESIGNED -	200
EXAMINED	
DRAWN -	ENGINEER OF BRIDGE DESIGN
PASSED	
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES